

Status of the CLAIMS

1. – 33. (Canceled)

34. (New) A system comprising:

a memory metal; and

a catalyst, wherein said catalyst is disposed on a first surface of said memory metal.

35. (New) The system of claim 34, further comprising a fuel-oxidizer mixture.

36. (New) The system of claim 35 wherein said fuel-oxidizer mixture is disposed on said first surface of said memory metal.

37. (New) The system of claim 35 wherein said fuel-oxidizer mixture is disposed on a second surface of said memory metal.

38. (New) The system of claim 35 further comprising a reaction initiator to commence a reaction of said fuel-oxidizer mixture.

39. (New) The system of claim 34 further comprising a heat source, wherein said heat source provides a sufficient amount of heat to said system to provide a self-sustaining reaction.

40. (New) The system of claim 34 wherein said memory metal comprises NITINOL.

41. (New) The system of claim 34 wherein said memory metal comprises a tube.

42. (New) The system of claim 34 wherein said memory metal comprises a wire.

43. (New) The system of claim 34 wherein said memory metal comprises a plate.

44. (New) The system of claim 34 wherein said catalyst is selected from the group consisting of palladium, platinum, and copper.

45. (New) The system of claim 35 wherein said fuel-oxidizer mixture is selected from the group consisting of hydrogen-oxygen, ammonia-oxygen, hydrocarbon vapor-oxygen, and alcohol vapor-oxygen.

46. (New) The system of claim 35 wherein said fuel-oxidizer mixture comprises a monopropellant.

47. (New) A system comprising:
a memory metal; and
a fuel-oxidizer mixture, wherein said fuel-oxidizer mixture is disposed on a first surface of said memory metal.

48. (New) The system of claim 47, further comprising a catalyst.

49. (New) The system of claim 48 wherein said catalyst is disposed on said first surface of said memory metal.

50. (New) The system of claim 48 wherein said catalyst is disposed on a second surface of said memory metal.

51. (New) The system of claim 47 further comprising a reaction initiator to commence a reaction of said fuel-oxidizer mixture.

52. (New) The system of claim 47 further comprising a heat source, wherein said heat source provides a sufficient amount of heat to said system to provide a self-sustaining reaction.

53. (New) A method comprising:
providing a memory metal having a catalyst disposed thereon; and
exposing said memory metal and said catalyst to a fuel-oxidizer mixture.

54. (New) The method of claim 53 further comprising initiating a reaction of said fuel-oxidizer mixture using a reaction initiator.

55. (New) The method of claim 53 wherein the operation of exposing further comprises flowing said fuel-oxidizer mixture over said memory metal and said catalyst.

56. (New) The method of claim 53 wherein the operation of exposing further comprises applying said fuel-oxidizer mixture to said memory metal.

57. (New) The method of claim 53 wherein selection of at least one of: (1) choice of catalyst; (2) amount of catalyst; (3) choice of fuel-oxidizer; and (4) amount of fuel-oxidizer results in a non-sustaining reaction.

58. (New) The method of claim 57 further comprising applying heat so that said reaction is sustained.

59. (New) The method of claim 58 further comprising controlling said amount of fuel-oxidizer mixture so that a sum of heat applied and heat generated during said reaction balances loss of heat.

60. (New) The method of claim 53 wherein a reaction of said fuel-oxidizer mixture occurs in a transition temperature range of said memory metal.

61. (New) The method of claim 53 further comprising flowing air over said memory metal.

62. (New) The method of claim 61 further comprising ceasing exposure of said memory metal and said catalyst to said fuel-oxidizer mixture.